

Step 2 — Now Extend to Many Dimensions

Suppose your movie users:

User 6:

$$A = (a_1, a_2, a_3, \dots, a_{100})$$

User 68:

$$B = (b_1, b_2, b_3, \dots, b_{100})$$

Then:

$$\cos(\theta) = \frac{a_1 b_1 + a_2 b_2 + a_3 b_3 + \dots + a_{100} b_{100}}{\sqrt{a_1^2 + a_2^2 + \dots + a_{100}^2} \sqrt{b_1^2 + b_2^2 + \dots + b_{100}^2}}$$

Same formula.